Virginia Coastal Resilience Technical Advisory Committee

Project Prioritization
Quarterly Subcommittee Meeting

Date: Tuesday, October 31st

Time: 10:30 am

Location: All Virtual

Virtual Access: Register at

https://vcu.zoom.us/meeting/register/tZYpdeuprz8oEteWFPjaYcVLzvMwQNzLvfV4

Ken Pfeil (Chair)	Office of Data Governance and Analytics
Marcus Thornton (A)	
Kellen Singleton	Accomack-Northampton Planning District Commission
Jack Krolikowski	American Flood Coalition
Jay Ellington	Crater Planning District Commission
Ben McFarlane	Hampton Roads Planning District Commission
Whitney Katchmark (A)	
Brianna Heath	Northern Neck Planning District Commission
Sarah Stewart	PlanRVA
Eli Podyma (A)	
Chris Swanson	Virginia Department of Transportation
Christopher Berg (A)	
Jamie Green	Virginia Marine Resources Commission
Rachael Peabody (A)	
Randy Owen (A)	
Scott Whitehurst	Virginia Port Authority
Mary-Carson Stiff	Wetlands Watch
John Bateman (A)	

Meeting Agenda

1) Call to Order, Roll Call
2) Adoption of Agenda
3) Adoption of Q3 Meeting Minutes
4) Invited Guests
5) Subcommittee Overview
6) Old Business
   - Coastal Resilience Master Plan, Phase II – Impact Assessment Outputs
7) New Business
   - Coastal Resilience Master Plan, Phase II – Impact Assessment Inputs
   - Subcommittee Discussion
8) Public Comment
9) Action Items, Scheduling
10) Adjourn

Invited Guests

Subcommittee Objectives

1. **Inform and support the flood hazard risk assessment.**
    - Specifically: the asset data inputs; the approach to quantifying the vulnerability of assets; and impact assessment outputs needed to support decision-making, coordination, and collaboration.

2. **Inform and support the identification of planned resilience actions.**
    - Specifically, identify shared themes, and gap trends between projects and initiatives submitted to the Coastal Resilience Web Explorer User Portal.

3. **Develop recommendations for future planning.**
   This includes, but is not limited to:
    - Identify goals and associated metrics for resilience that should be used to determine project/needs evaluation and prioritization in future plans.
    - Develop objective protocols for evaluating and prioritizing identified project **needs** for the Coastal Region.
    - Develop a process and objective protocols for evaluating and prioritizing resilience **actions**. (Consider separate evaluation protocols for critical human, built, and natural infrastructure needs.)

Subcommittee Schedule

Q3 2023	CRMP PII – Risk Assessment Outputs
Q4 2023	**CRMP PII – Risk Assessment Outputs + Inputs**
Q1 2024	CRMP PII – Risk Assessment Inputs
	Future Plans – Recommendations
Q2 2024	CRMP PII – Analyze Planned Resilience Actions
	Future Plans – Recommendations
Q3 2024	CRMP PII – Analyze Planned Resilience Actions
	Future Plans – Recommendations
Q4 2024	Future Plans – Final Recommendations

General Updates

- **Coastal Resilience Web Explorer User Portal is live**
  - New users must submit a completed User Access Form (PDF) to DCR (resilience.explorer@dcr.virginia.gov).
  - Forms can be accessed via DCR's website or the user portal website.
    - dcr.virginia.gov/crmp/cr-web-explorer
    - varesilienceexplorer.com
  - Received 143 submissions via bulk upload with Coastal Zone Management. Reviews and approvals in progress.

- DCR has received and is reviewing responses to the **Resilience Planning and Consulting RFP**

PDC	Projects	Initiatives	Total
NVRC	59	10	69
PlanRVA	22	24	46
Crater	13	0	13
GWRC	5	4	9
NNPDC	4	0	4
MPPDC	1	1	2
ANPDC	0	0	0
HRPDC	0	0	0
Grand Total	**104**	**39**	**143**

Old Business

Coastal Resilience Master Plan, Phase II – Flood Hazard Impact Assessment Outputs

Summary of Feedback from Q3 Meeting

- Identify the intended audiences.
- Contextualize what flooding means for intended audiences.
- Provide guidance alongside these outputs to support decision making.

- Provide more accessible analysis of the duration and frequency of flooding.
- Clearly define what is "at risk" and why. For ex., at what flood depth does a roadway become impassible?
- Provide summary statistics for status of risk at multiple geographic scales (statewide, PDC, locality), including for grant application purposes.

For example, to:

- Set goals for infrastructure protection.
- Decide where and when to invest in new or expanded infrastructure (for ex., state capital investment decisions, pursuit of grant dollars).
- Consider timing and location of relocation and adaptation strategies.
- Conduct benefit-cost analyses for policy decisions.

Updates and Discussion

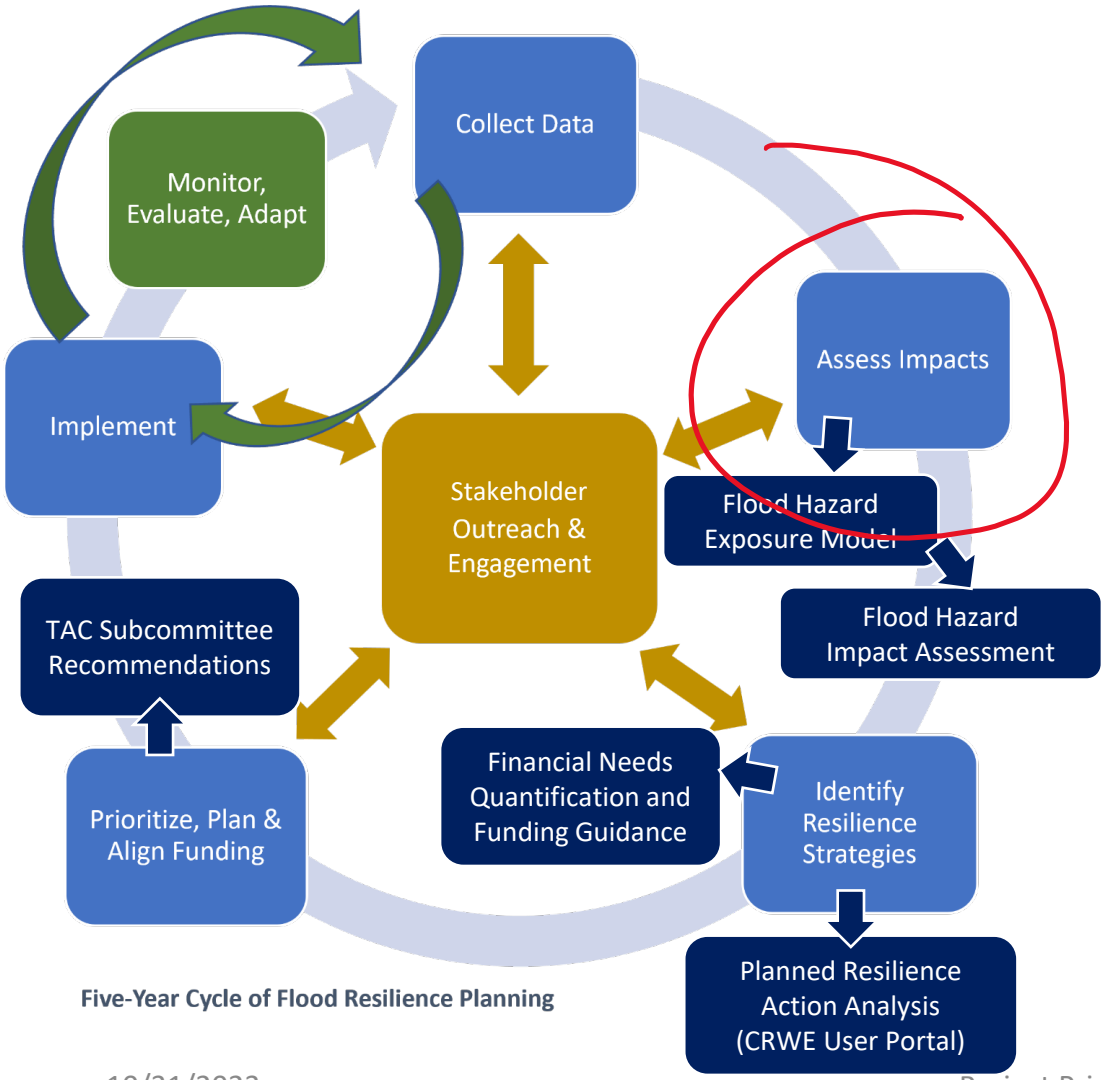
Major impact assessment updates from DCR:

1. Defined intended audiences
2. Determined asset groupings
3. Set minimum standard for impact assessment
   Will use iterative process to build upon minimum during plan development

DCR Staff Request TAC feedback on:

1. End user survey
2. Natural infrastructure asset grouping and assessment
3. Alternative metrics for jurisdictional capacity

Impact Assessment in the Planning Cycle



Five-Year Cycle of Flood Resilience Planning

The purpose of the Flood Hazard Impact Assessment is to support plan *end users* to…

Identify and understand vulnerabilities to flooding to facilitate the prioritization of limited resources for protection and adaptation.

The assessment might facilitate end users' decisions such as:

- Setting goals and establishing metrics
- Selecting projects to advance to implementation
- Identifying and instituting policies
- Seeking or allocating funding

Who are the **intended audiences**?

Primary Audiences:

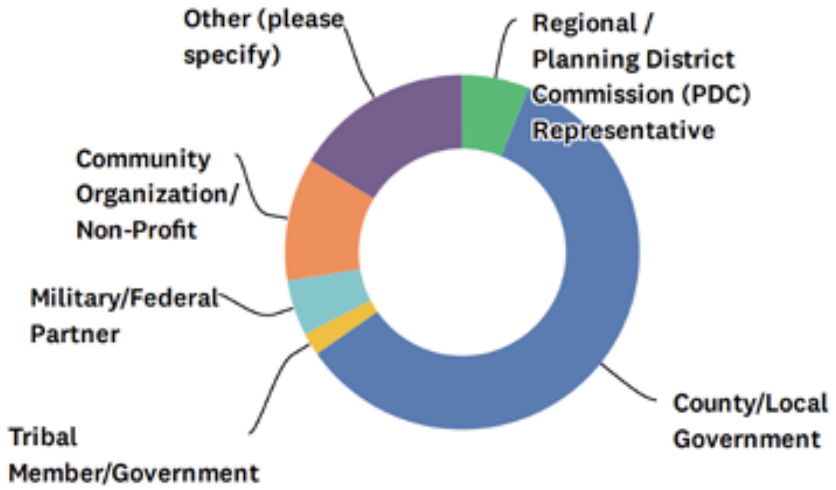
- Planning District Commissions (8)
- Localities (57)
- State Agencies/ Programs (10+)
- Tribal Governments (10)

How might they use the plan?

- Use models and findings as a starting point for additional assessment of asset and programmatic vulnerability
- Incorporate flood hazard exposure models and impacts into other long-range plans
- Leverage models and findings to aid in identifying and prioritizing resilience actions, and developing grant applications
- Identify opportunities for collaboration with other actors toward resilience
- Justify budgetary requests

What we've heard previously

98 Survey Responses in Summer 2021



Familiarity with CRMP

63% of 73 responses indicated that they were at least "somewhat familiar" with the planning project to improve resiliency in coastal areas.

Anticipated benefits of the CRMP

1. Prioritizing and funding projects (14)
2. Building awareness to motivate action (11)
3. Coordinated leadership to implement a state plan of action (10)
4. Developing a needs assessment and data to use in resilience efforts (9)
5. Providing guidance for appropriate adaptation options (8)
6. Developing partnerships, collaboration, and coalition-building (3)

https://www.dcr.virginia.gov/crmp/document/Appendix-L-Centralized-Stakeholder-Survey-Summary.pdf

Phase II End User Survey

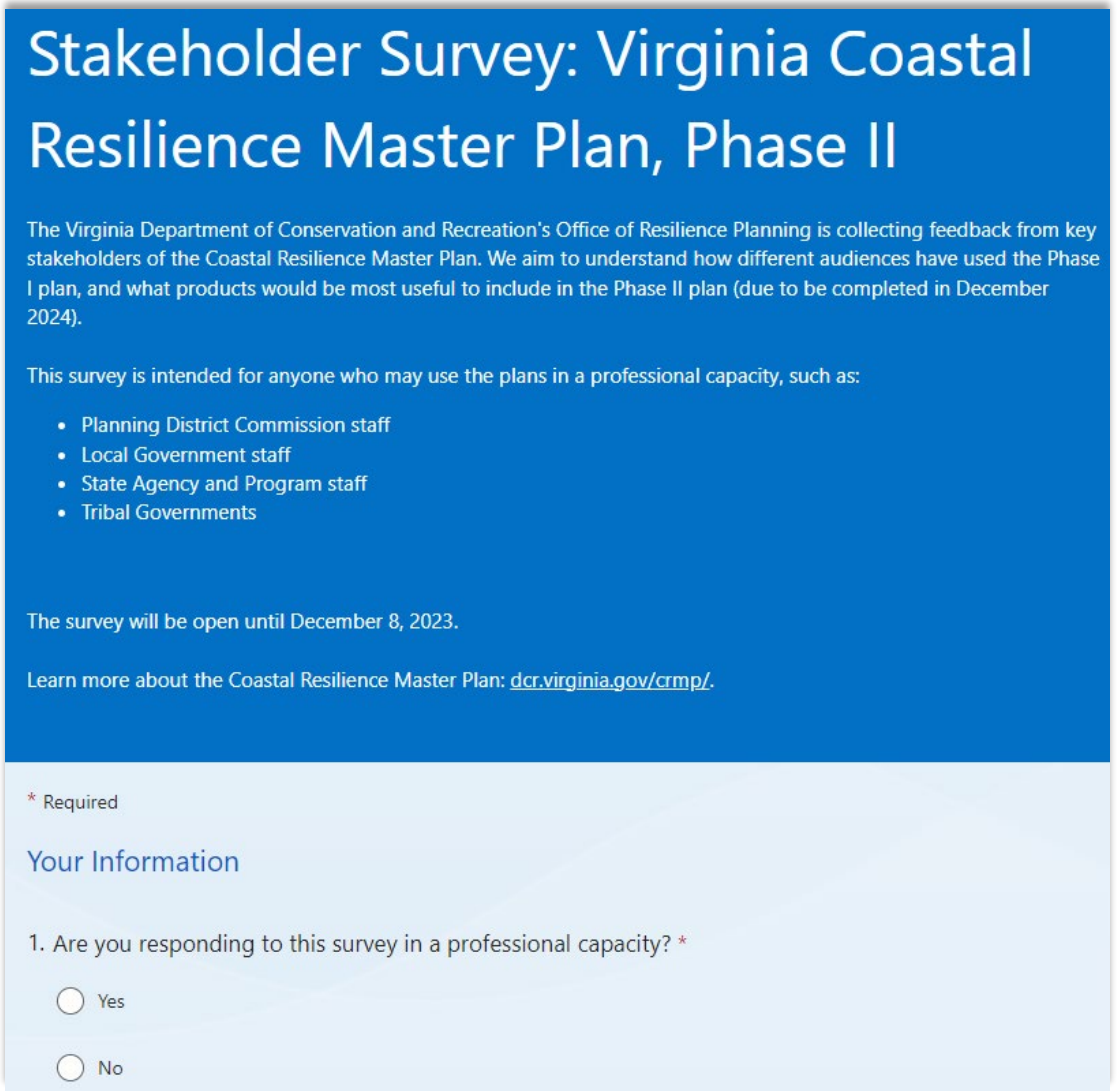
Key topics for inclusion:

- CRMP Phase I
  - Web Explorer
  - Open Data Portal
- Funding Flood Resilience Activities

Recipients:

- Local governments
- PDCs
- Tribal governments
- Consultants for Localities/PDCs/Tribes on resilience

Timeline: Receive responses by end of calendar year.



Stakeholder Survey: Virginia Coastal Resilience Master Plan, Phase II

The Virginia Department of Conservation and Recreation's Office of Resilience Planning is collecting feedback from key stakeholders of the Coastal Resilience Master Plan. We aim to understand how different audiences have used the Phase I plan, and what products would be most useful to include in the Phase II plan (due to be completed in December 2024).

This survey is intended for anyone who may use the plans in a professional capacity, such as:

- Planning District Commission staff
- Local Government staff
- State Agency and Program staff
- Tribal Governments

The survey will be open until December 8, 2023.

Learn more about the Coastal Resilience Master Plan: dcr.virginia.gov/crmp/.

* Required

Your Information

1. Are you responding to this survey in a professional capacity? *

Yes

No

Subcommittee Discussion

End Users & Survey Questions

Phase II: Assets

What assets are we assessing?

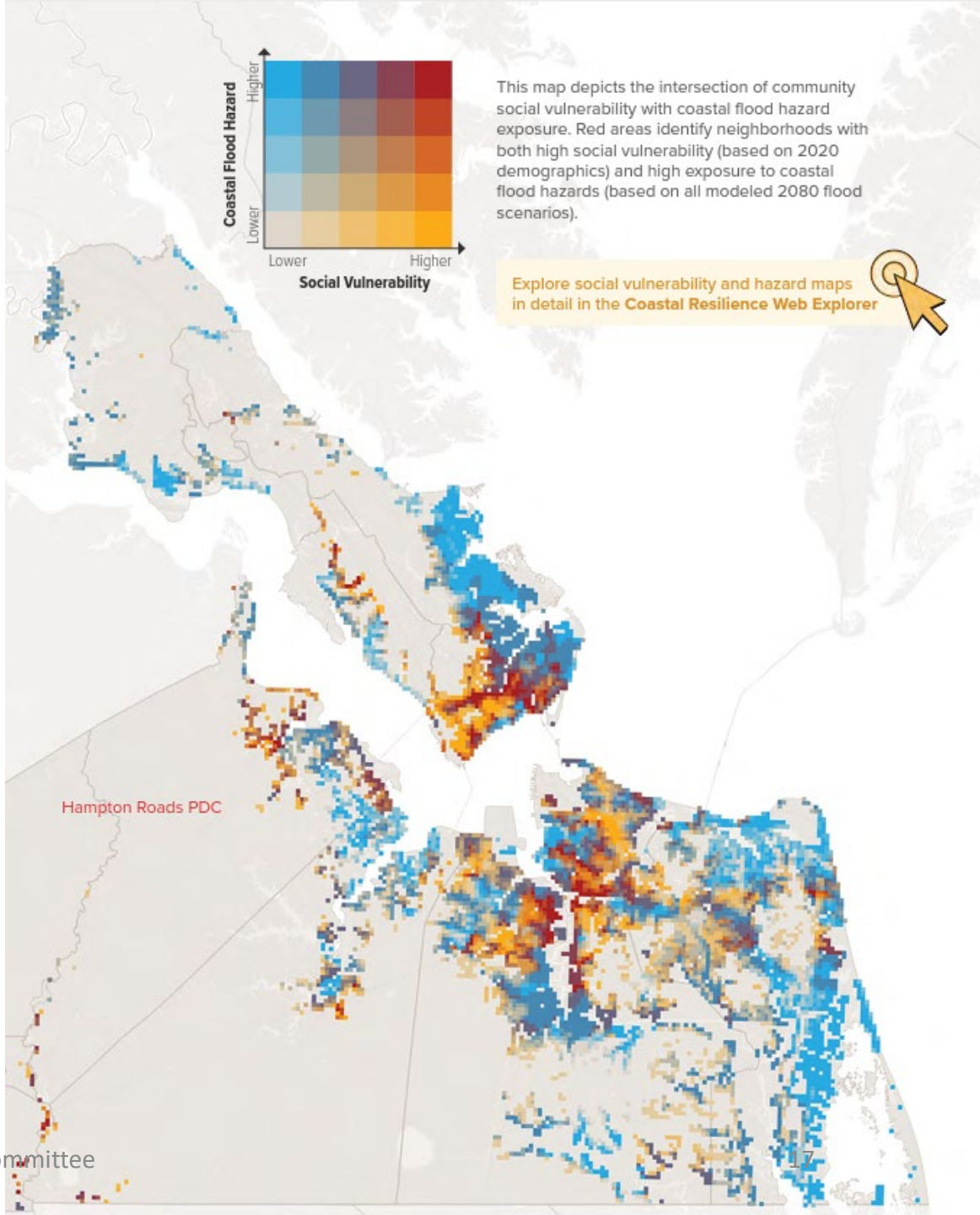
- (Mostly) the same assets as Phase I.
  - Conduct the assessment at the level of individual assets.
  - Aggregate assets by gridded cells, jurisdictions and watershed

Phase I		Phase II	
Themes	**Components/Sub-Components**	**Themes**	**Components/Sub-Components**
Community Resources	Population (Residential Displacement/Exposure)	*Community Resources*	*Population (Residential Displacement/Exposure)*
	Residential Neighborhoods		*Residential Neighborhoods*
	Public and Commercial Structures		
	Agricultural Lands		
	Tribal Resources		*Tribal Resources*
			Historic Resources
Critical Sectors	Commercial + Manufacturing	Built Infrastructure	Commercial Facilities
			Critical Manufacturing
	Communication Systems		Communications
	Defense Industry		Defense Industrial Base
	Energy Systems		Energy
	Transportation Systems		Transportation Systems
	Water, Waste, Wastewater		Water and Wastewater
			Information Technology
			Chemical
			Dams
			Nuclear Reactors, Materials, and Waste
	Government Facilities	Human Infrastructure	Government Facilities
	Health + Emergency Services		Emergency Services
			Healthcare and Public Health
			Food and Agriculture
			Financial Services
Natural Infrastructure	Tidal Wetlands	Natural Infrastructure	TBD: Reviewing options with DCR Natural Heritage and VIMS. Looking at the following existing databases: • ConserveVirginia • ConservationVision • Conservation Lands
	Beaches and Dunes		
	Upland Habitats		
	Conserved Lands		
	Aquatic Vegetation		
	Oyster Reefs		

Community Context Metrics

- **Social Vulnerability**
  - Relative Social Vulnerability of a Household
  - Relative Social Vulnerability for an Area of Interest
- **Jurisdictional Resources and Capacity**
  - Fiscal Stress Index

These factors were provided as context in the Phase I plan – including via narrative summary of survey results. They **were not directly considered in the flood hazard impact assessment products**.



Summary of New or Altered Asset Groupings

1. Additional/reorganized **critical infrastructure** sectors ("components") to align with VDEM and CISA approach. Additional sectors are:
   - Information Technology, Chemical, Dams, Nuclear, Food & Agriculture, Financial Services
     - Not all assets will be analyzed similarly in the impact assessment (ex., Dams)
   - Organized under "human," and "built" categories.
   - Maintain assessment approach to focus on exposure.

2. Revised **natural infrastructure** components.

Impact Assessment Approach

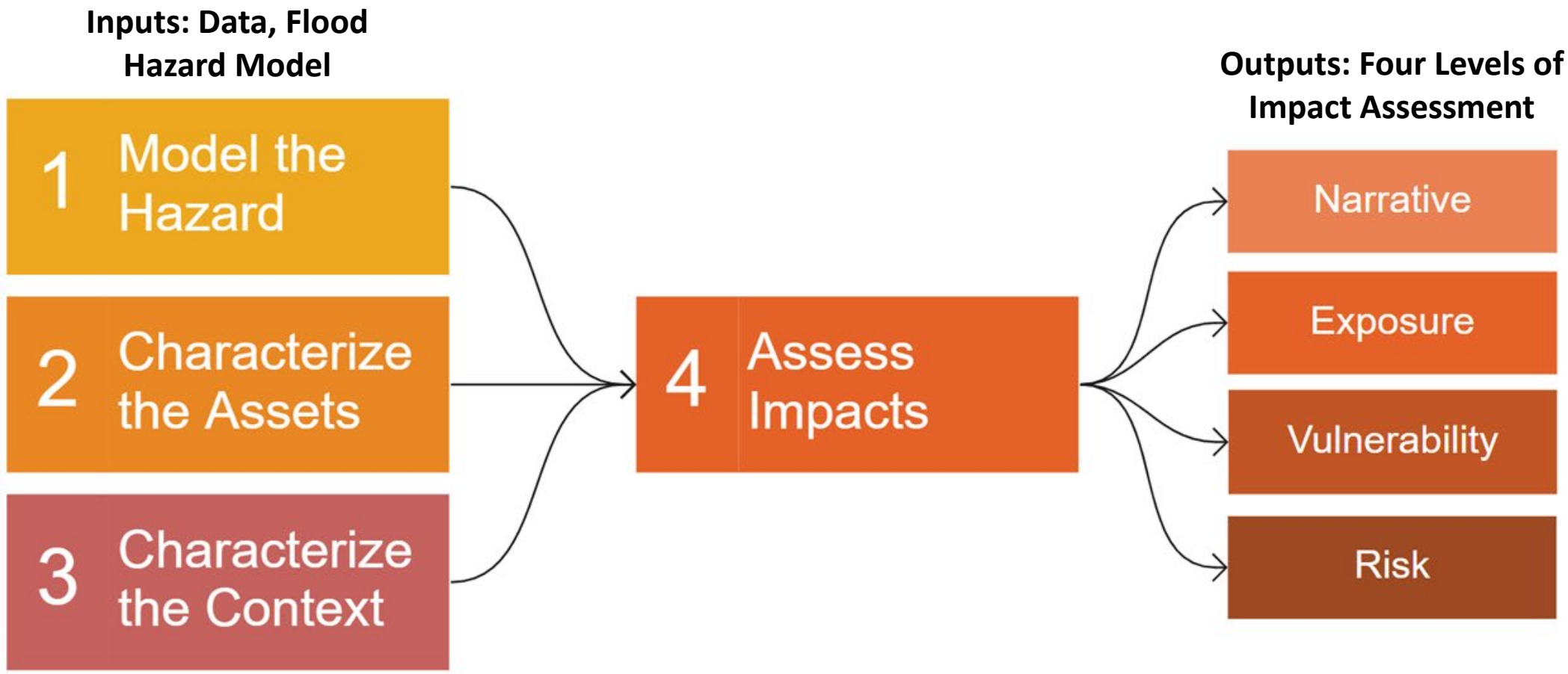


Figure 3: Overview of the impact assessment approach.

See the Phase I Plan Appendix E for additional details.

Exposure, Vulnerability, or Risk?

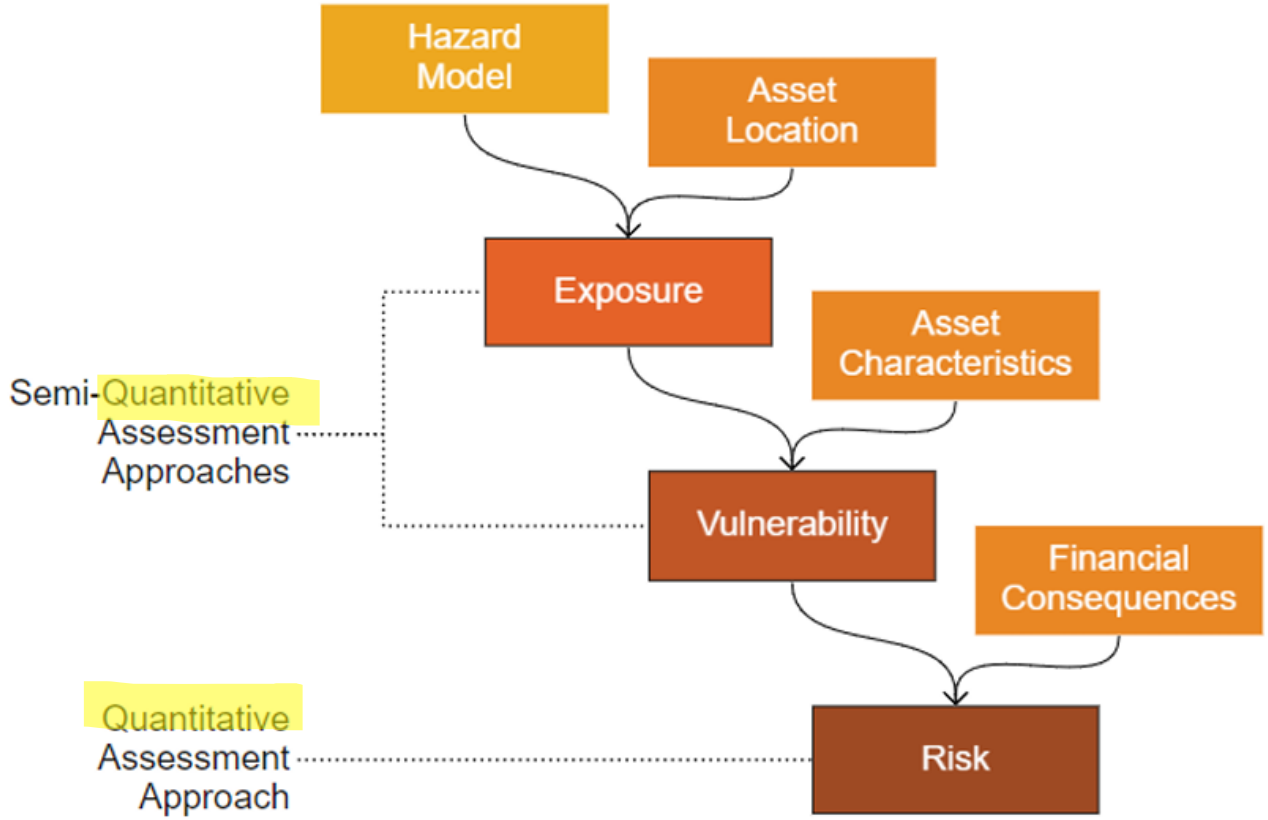


Figure 7: Asset information required to describe impacts with varying levels of detail.

At this scale, using quantitative assessment approaches, available asset and flood hazard data creates limitations for the assessment.

Should also consider what level of analysis is most useful for the anticipated end-users to receive via this plan, and feasible to produce.

Phase II: What Output Metrics could we Produce?

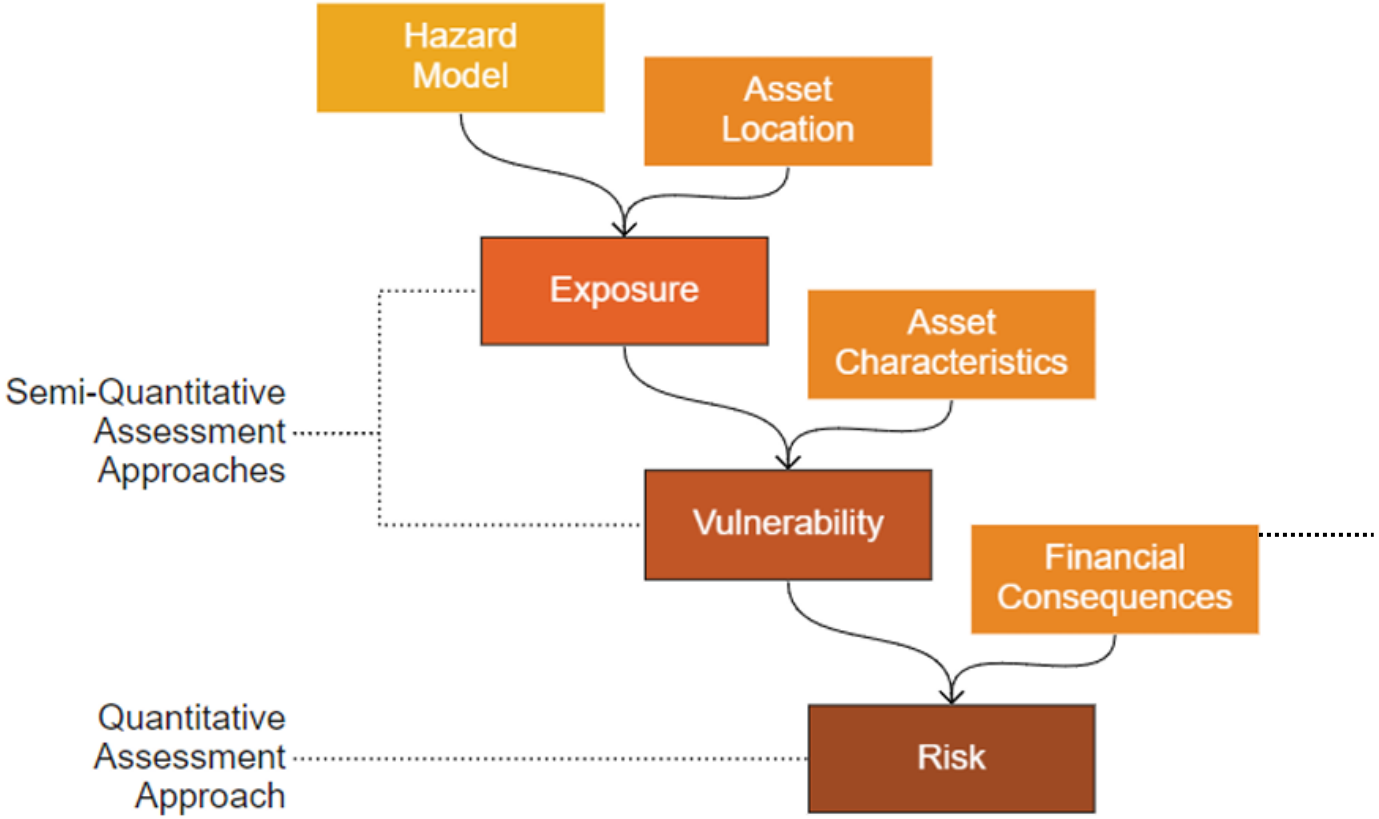


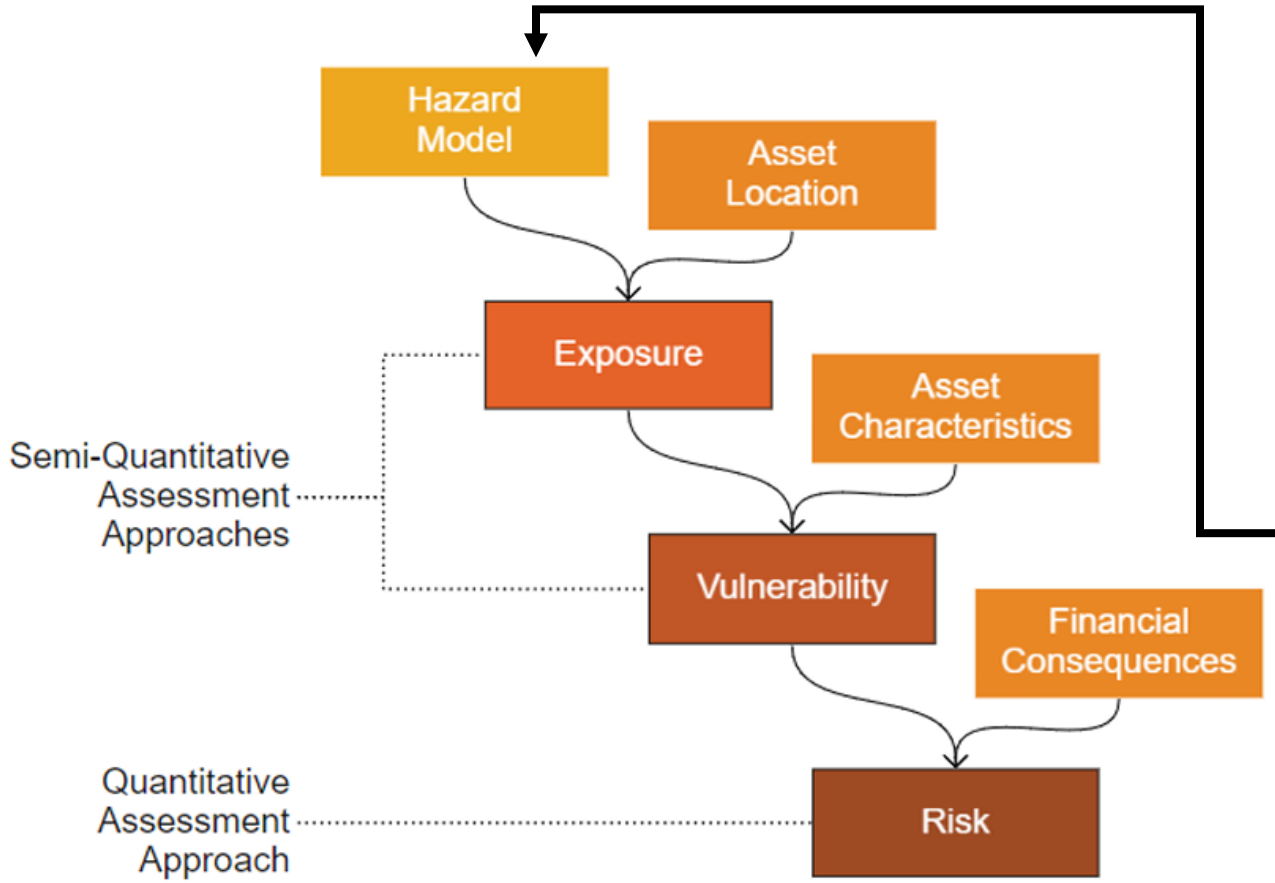
Figure 7: Asset information required to describe impacts with varying levels of detail.

Risk does not need to be financial.

Other opportunities to quantify risk include:

- Assigning a **level of criticality** to asset characteristics, included in analysis
  - Ex., transportation evacuation routes, ecological cores
- Other **direct/indirect consequences** of flood impacts

Phase II: What Output Metrics could we Produce?



Coastal Hazards
2020 – 2100 Scenarios
All return interval flood events
(Highest available level of analysis)

Riverine Hazards
Current special flood hazard area
(Limited categorical vulnerability)

Pluvial Hazards
Up to five climate scenarios
All return interval flood events
(Highest available level of analysis)

Combined Hazards
(Exposure)

Figure 7: Asset information required to describe impacts with varying levels of detail.

Level of Assessment (Phase I)

Type	Highest Level of Assessment	Associated Metrics Produced
Residential Population	Exposure	Population Exposure
Public, Commercial, Residential Structures	Risk	Average Annualized Loss
Agricultural Lands	Exposure	Annualized Inundated Acres
Tribal-Owned Lands	Vulnerability	Land Lost
Critical Infrastructure Assets	Exposure	Annual Likelihood of Flooding
DoD Lands	*Vulnerability*	*Land Lost*
VDOT Roads	*Vulnerability*	*Average Annualized Flood Depth*
Aquatic and Tidal Habitats	Vulnerability	Habitat Lost
Beaches, Dunes, Upland Habitats and Conserved Lands	Vulnerability	Land Lost

Phase II Impact Assessment Approach: Output Metrics

Start with the same assessment data and methodology from Phase I.

- Anticipate iterative approach to move from the exposure to risk levels of assessment, where feasible.

Conduct a unique impact assessment by asset for each flood hazard (coastal, pluvial, and limited fluvial).

Once developed, present results by individual flood hazard, and potentially by combined impact.

Phase II Output Metrics

Measures of Exposure

- Annual Likelihood of an Asset Experiencing Flooding
- Annualized Number of Assets Experiencing Flooding
- Annual Likelihood of a Person Experiencing Flooding
- Annualized Population Experiencing Flooding
- Annualized Inundated Acres
- *Additional measures TBD*
  - *Annualized Socially Vulnerable Population Experiencing Flooding*

Context Metrics

- Relative Social Vulnerability of a Household
- Relative Social Vulnerability for an Area of Interest
- Jurisdictional Resources and Capacity
- *Additional measures TBD*
  - *Household Median Income*
  - *Opportunity Zones*

Measures of Vulnerability

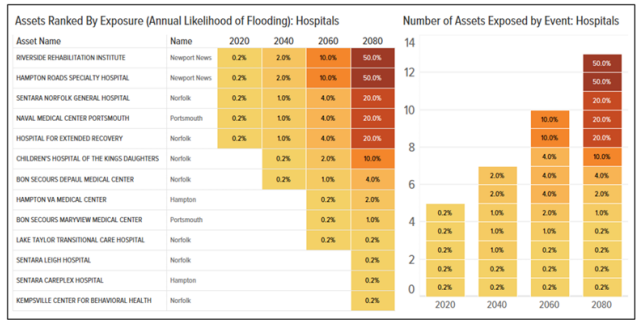
- Average Annualized Flood Depth for an Asset
- Cumulative Annualized Flood Depth Across Assets
- Loss of Land Area
- Potential Conversion of Tidal Wetlands to Open Water
- Acres of Potential Habitat Lost
- *Additional measures TBD*
  - *Additional presentation of expected Population/Residential Structures Experiencing Chronic Flooding*

Measures of Risk

- Average Annualized Loss (Structural)
- *Additional measures TBD*
  - *Ecosystem services value (wetlands loss)*
  - *Measures of criticality/scale of impact*

CRMP Phase I Flood Impact Reporting

Asset-Level Reporting



Assets Ranked By Exposure (Annual Likelihood of Flooding): Hospitals

Asset Name	Name	2020	2040	2060	2080
RIVERSIDE REHABILITATION INSTITUTE	Newport News	0.2%	2.0%	10.0%	50.0%
HAMPTON ROADS SPECIALTY HOSPITAL	Newport News	0.2%	2.0%	10.0%	50.0%
SENTARA NORFOLK GENERAL HOSPITAL	Norfolk	0.2%	1.0%	4.0%	20.0%
NAVAL MEDICAL CENTER PORTSMOUTH	Portsmouth	0.2%	1.0%	4.0%	20.0%
HOSPITAL FOR EXTENDED RECOVERY	Norfolk	0.2%	1.0%	4.0%	20.0%
CHILDREN'S HOSPITAL OF THE KINGS DAUGHTERS	Norfolk		0.2%	2.0%	10.0%
BON SECOURS DEPAUL MEDICAL CENTER	Norfolk		0.2%	1.0%	4.0%
HAMPTON VA MEDICAL CENTER	Hampton			0.2%	2.0%
BON SECOURS MARYVIEW MEDICAL CENTER	Portsmouth			0.2%	1.0%
LAKE TAYLOR TRANSITIONAL CARE HOSPITAL	Norfolk			0.2%	0.2%
SENTARA LEIGH HOSPITAL	Norfolk				0.2%
SENTARA CAREPLEX HOSPITAL	Hampton				0.2%
KEMPSVILLE CENTER FOR BEHAVIORAL HEALTH	Norfolk				0.2%

Number of Assets Exposed by Event: Hospitals

Figure 22: Hospital exposure data derived from an asset table helps to compare impacts across events and/or facilities.

This data was not made publicly available.

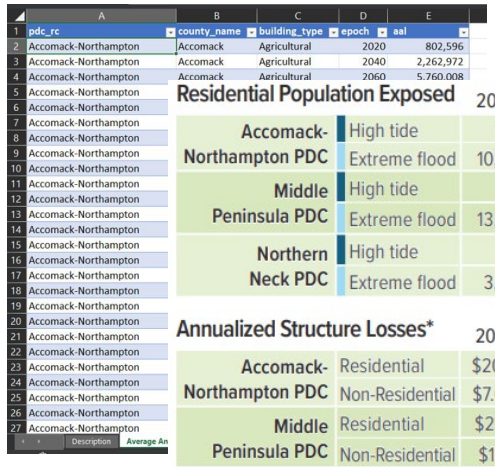
Narrative Impacts in Plan

Professional Perspectives: What We Heard about Agricultural Impact

Nearly 100 representatives from government and partner organizations responded to a survey with questions related to their professional experiences. Of those respondents:

42% believe their community's agricultural industry is particularly vulnerable to climate change and coastal hazards.

Tabular Summarization Across Jurisdictions



pdc_rc	county_name	building_type	epoch	aal
Accomack-Northampton	Accomack	Agricultural	2020	802,596
Accomack-Northampton	Accomack	Agricultural	2040	2,262,972
Accomack-Northampton	Accomack	Agricultural	2060	5,760,008

Residential Population Exposed

		2020	2080	Change
Accomack-Northampton PDC	High tide	200	7,800	+ 3816%
	Extreme flood	10,900	14,600	+ 34%
Middle Peninsula PDC	High tide	170	7,600	+ 4407%
	Extreme flood	13,900	21,000	+ 51%
Northern Neck PDC	High tide	140	2,400	+ 1642%
	Extreme flood	3,800	9,900	+ 157%

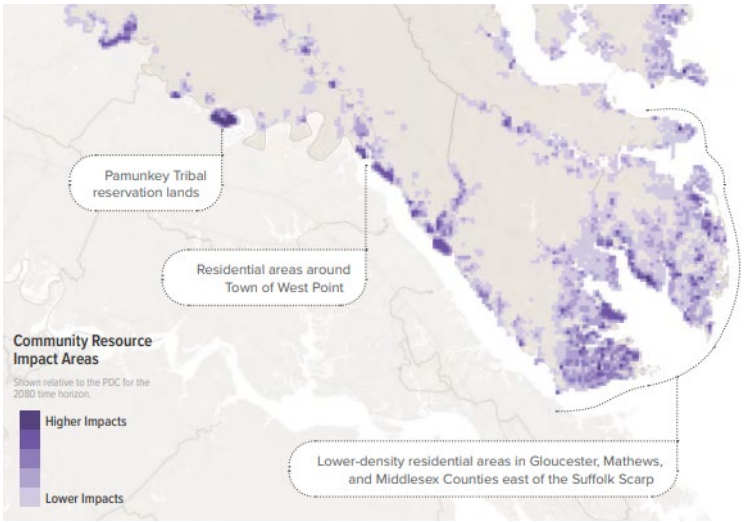
Annualized Structure Losses*

		2020	2080	Change
Accomack-Northampton PDC	Residential	$20.7M	$289M	+ 1299%
	Non-Residential	$7.63M	$77.0M	+ 909%
Middle Peninsula PDC	Residential	$25.1M	$355M	+ 1317%
	Non-Residential	$13.1M	$64.6M	+ 394%
Northern Neck PDC	Residential	$11.2M	$136M	+ 1110%
	Non-Residential	$7.96M	$28.2M	+ 255%

* Projected average annualized losses due to damages to structures and contents.

Available as:
Tabular data downloads, Summaries in Web Explorer and Plan document

Comparative (Gridded) Hot Spot Identification



Available as:
Visible layers in the Coastal Resilience Web Explorer, Static maps in the Plan document, GIS download

Phase II Output Potential Reporting Products

- **Updated summaries in the PDF** for all hazards and asset themes.
  - Potential addition of context and “impact stories” for flood exposure.
  - Additional hotspots and gaps analyses based on the impact findings.
- **Updated data viewers in the web explorer** for all hazards and asset themes.
  - Summaries of impacts across the whole PDC, locality (polygon files) in addition to gridded impact summary (raster files).
- **Tabular and shapefile data download** availability for flood impacts.
  - Make data download available at locality scale in both tabular and GIS format (polygon and raster) for all impact metric outputs.
- **Decision-making support** in the form of case studies and post-plan technical assistance.

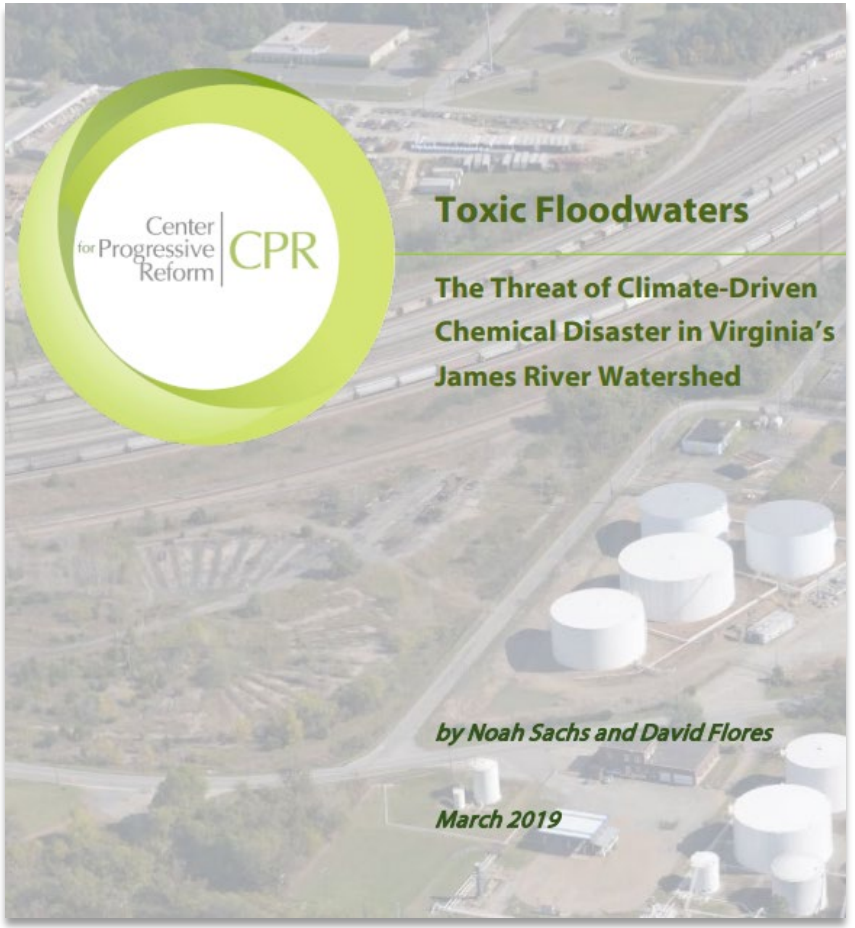
Impact Stories in the Plan

Illustrate cross-cutting themes relevant across asset types.

Communicate indirect consequences of flooding across a watershed that are not quantitatively measured in the plan.

For example, potential for increasing impacts of flooding on water quality:

- Point-Source Pollution – Industrial and Waste Facilities
- Non-point Source Pollution – Shoreline/Bank Erosion, Impervious Surfaces, Ag/Residential Land Cover

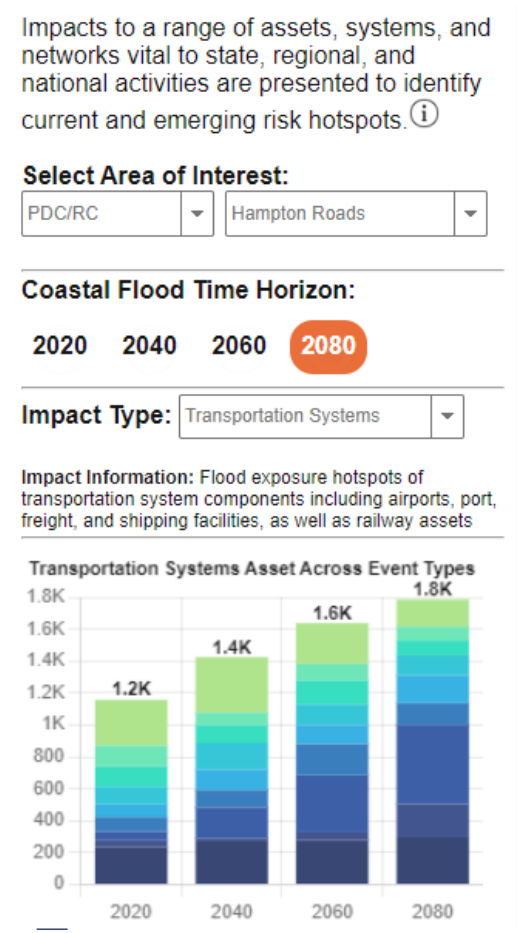


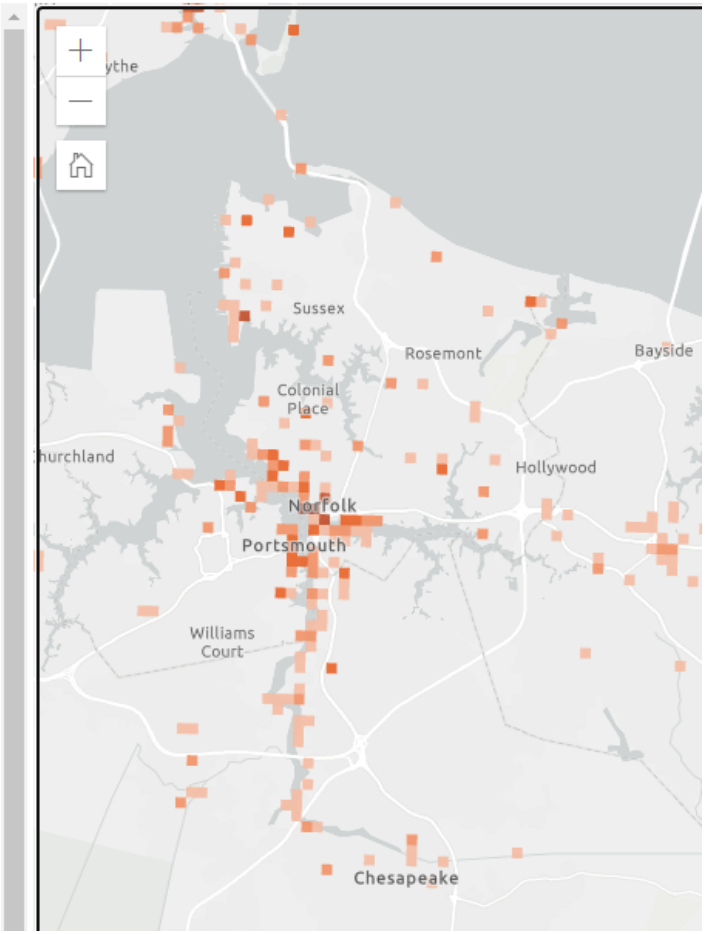
https://cpr-assets.s3.amazonaws.com/documents/VAToxicFloodwaters.pdf

VDOT Assets in the Impact Assessment

- Propose to conduct impact assessment with a similar level of analysis to what was conducted during phase I. Potential updates may include:
  - Report impact types by category of roadway (evacuation routes, interstates, etc.)
  - Additional reporting to communicate vulnerability in terms of service disruption (ex., traffic volume data)

- Rationale:
  - It is important to include VDOT transportation infrastructure in the plan.
  - VDOT's comprehensive vulnerability assessment will not be complete in time to include in the plan; it is not yet determined which elements will be publicly available.





Natural Infrastructure

Phase I Approach

Table 7: Natural Infrastructure datasets.

COMPONENT	SUB-COMPONENT	ASSET	METRIC	UNIT	DATA TYPE	DATE	SOURCE
Aquatic Habitat	Oyster Habitat	Oyster Habitat	Habitat Lost	Acres	Polygon	2019	VIMS
	SAV Habitat	SAV Habitat	Habitat Lost	Acres	Polygon	2020	VIMS
Beaches & Dunes	Beaches & Dunes	Beaches & Dunes	Land Lost	Acres	Polygon	2021	VIMS
Tidal Habitat	Wetland Habitat Loss	Marsh Habitat	Habitat Lost	Acres	Raster	2020	NOAA
	Wetland Migration Prevention	Marsh Migration Conflicts	Habitat Endangered	Acres	Raster	2020	NOAA
Upland Habitat	Non-Tidal Marsh	Non-Tidal Marsh Habitat	Land Lost	Acres	Polygon	2020	VIMS
	Upland Wooded Areas and Scrub-Shrub	Upland Wooded Areas and Scrub-Shrub	Land Lost	Acres	Polygon	2021	VIMS
Conserved Lands	Public Parks and Wildlife	Public Parks and Wildlife Areas	Land Lost	Acres	Polygon	2020	DCR

In Phase I, minimal differentiation between components, subcomponents, assets. Limited context to understand relative importance of assets impacted by flooding.

Potential Phase II Approach

Non-hierarchical approach; assets may overlap across categories.

- Land Cover
  - Wetlands, forests, etc.
- Ecological priority
  - Natural habitat and ecosystem priorities, Potential rare species richness
- Working lands
  - Recreational lands, croplands, pasture land, harvested forests
- Conservation status
  - Conserved, important buffers to conserved lands
- Resilience capacity
  - Wetland migration potential
- Others?
  - Depending on available data

Output Metrics:

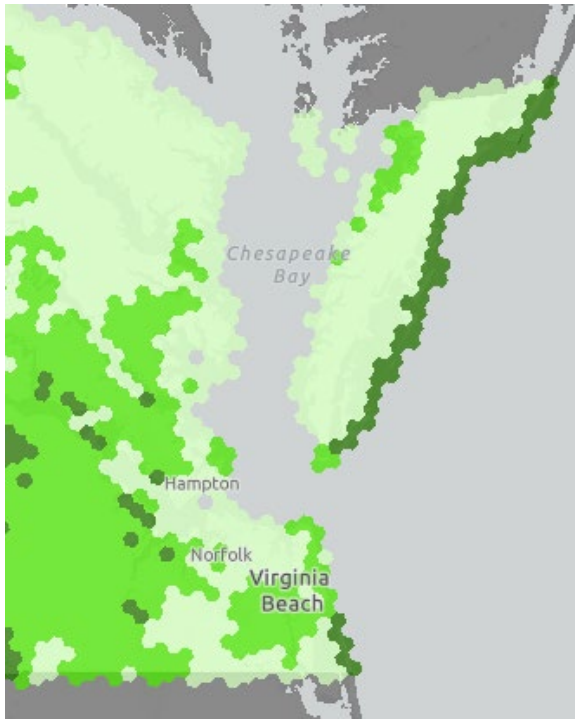
- Land Lost / Habitat Lost
- Others?
  - Proximity to flood risk
  - Depending on available data

Natural Infrastructure: Priority Ecological Landscapes

DCR Natural Habitat and Ecosystem Priorities

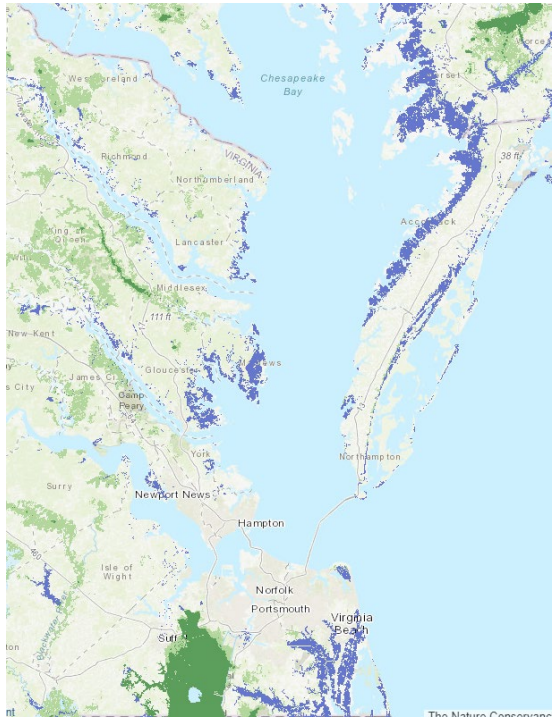
ConserveVirginia: unprotected, high priority lands for conservation

DCR Potential Rare Species Richness

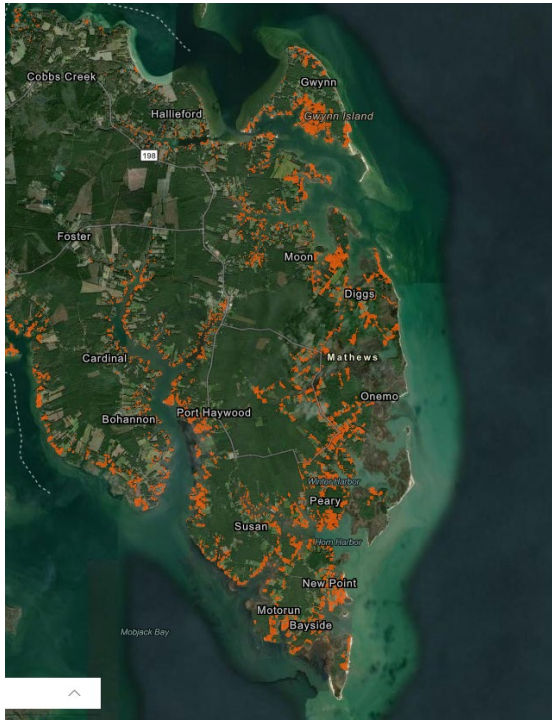


Conservation Vision: rankings of conserved and non-conserved lands.

TNC Resilient and Connected Network



VIMS Opportunity for Wetlands Migration



Subcommittee Discussion

Natural Infrastructure Theme

New Business

Asset Data Inputs to the Impact Assessment

Subcommittee Discussion

Phase I Asset Data Input Sources

All asset data must be spatially referenced for use in the impact assessment.

See Appendix E of the Phase I plan, page 62 for a complete Data Catalog.

- **Community Resources Theme**
  - Commercial real estate (LightBox)
  - OpenStreetMap
  - Locality/PDC data
  - Census Bureau
- **Critical Sector Theme**
  - Federally managed datasets: Homeland Infrastructure Foundation-Level Data (HIFLD) Open Data, FAA data, ESRI Department of Defense Data
  - State datasets: Virginia DEQ, VEDP, VDOT, VDH
- **Natural Infrastructure Theme**
  - State datasets: DCR, Virginia Institute of Marine Science
  - NOAA

Impact Assessment: Asset Data Inputs

Data Review (Ongoing)

- Dewberry is conducting a data review of Phase I asset data inputs to identify opportunities for asset data input updates.
- We intend to use the most up-to-date versions of datasets for unchanged assets (ex., Census 2020, VGIN building inventory, etc.).
- Open to suggestions/ideas for new or improved datasets from the TAC.

Request for Feedback:

Community Context, Jurisdictional Resources and Capacity

- Discuss alternate options to fiscal stress index

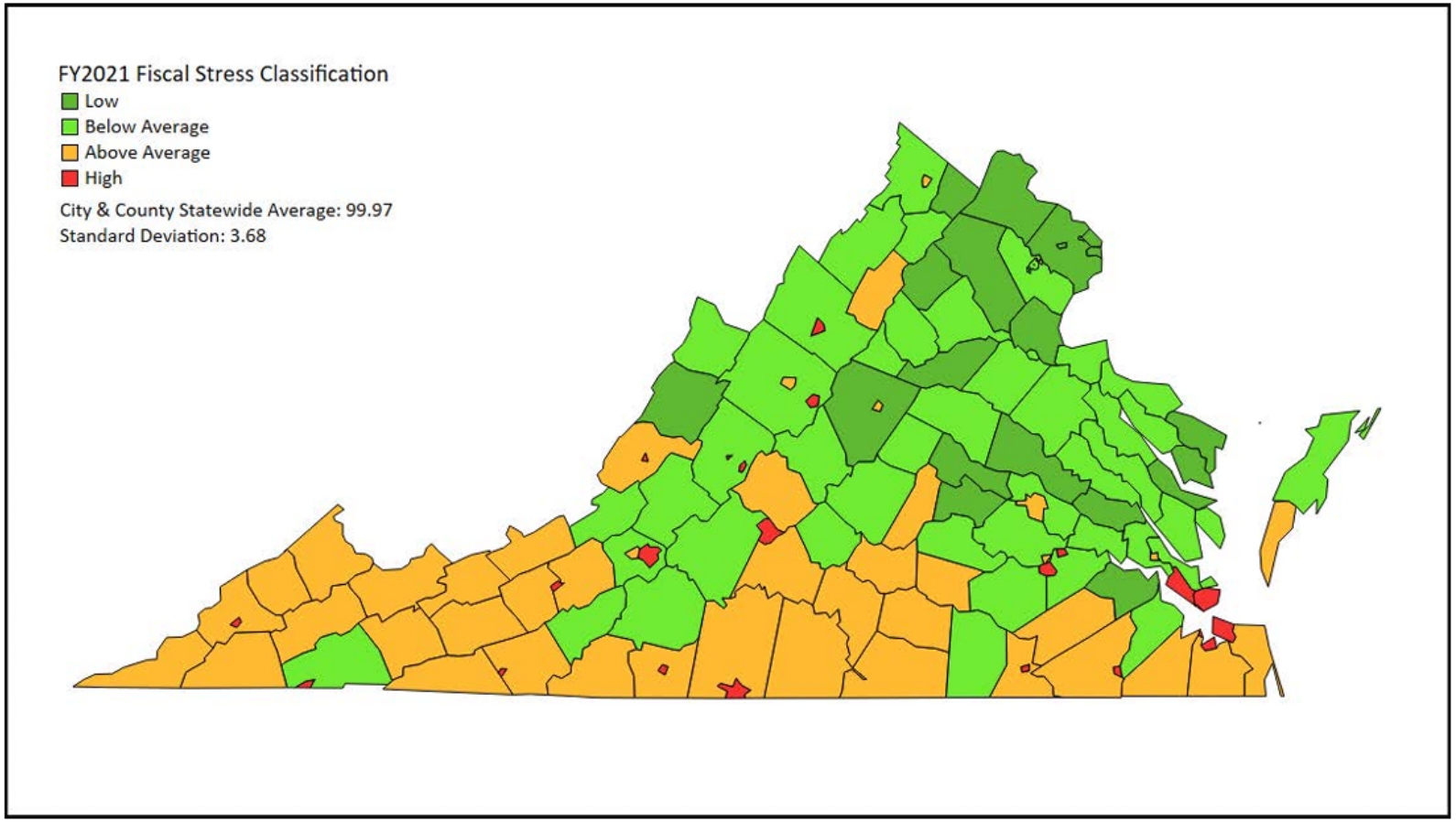
Fiscal stress index measures "a locality's ability to generate additional local revenue from its current tax base relative to the rest of the Commonwealth."

Calculated Index offered "as a means to distribute state aid" to the counties and cities in the Commonwealth.

Index evenly weights three variables:

- ***Revenue capacity*** – how much revenue a jurisdiction could generate if it taxed its population at statewide average rates.
- ***Revenue effort*** – ratio of actual tax collections to revenue capacity.
- ***Median household income***.

Commonwealth of Virginia: FY2021 Fiscal Stress by City and County



Source: Virginia Department of Housing and Community Development, Commission on Local Government

Subcommittee Discussion

Impact Assessment Input Data

Fiscal Stress Index as a Metric

Other Topics of Discussion

Public Comment

If you seek to provide public comment, please sign up either in-person or virtually using the Chat window.

Action Items, Scheduling

- Action Item Review
- Meeting Recurrence Survey Results:
  - Preference for Tue/Wed/Thu mornings
- Full TAC Meeting on December 15, 2023 (all virtual)
- 2024Q1 Subcommittee Meeting
  - Agenda Items: Updates on Impact Assessment Approach (Inputs), Recommendations for Future Plans

User Survey: Virginia Coastal Resilience Master Plan

We recommend completing this survey on a desktop for the best experience.

The Virginia Department of Conservation and Recreation's Office of Resilience Planning is collecting feedback from intended end users of the Coastal Resilience Master Plan. We aim to understand how different audiences have used the Phase I plan, and what products would be most useful to include in the Phase II plan (due to be completed in December 2024).

This survey is intended for anyone who may use the Coastal Resilience Master Plan in a professional capacity, such as:

- Planning District Commission staff
- Local Government staff
- State Agency and Program staff
- Tribal Governments
- Others supporting the organizations above in developing and implementing flood resilience activities

There are 20 questions, which should take approximately 15 minutes to complete.

The survey will be open until December 8, 2023.

Learn more about the Coastal Resilience Master Plan: dcr.virginia.gov/crmp/.

* Required

Your Information

1. Name *

2. Title *

3. Email Address *

4. Employer Name *

5. Please indicate which of the following best represents your employer's primary function. *

- ◯ Community-based organization
- ◯ Consulting firm conducting flood resilience work
- ◯ Federal government
- ◯ Private industry (other than flood resilience consulting)
- ◯ Grant-making organization
- ◯ Local government - elected official
- ◯ Local government staff
- ◯ Planning District Commission staff
- ◯ Regional or statewide advocacy organization
- ◯ State government - elected official
- ◯ State government - staff
- ◯ University or Institute of Higher Education
- ◯ Not applicable
- ◯ Other

Coastal Resilience Master Plan, Phase I

Phase I of the Virginia Coastal Resilience Master Plan was released in December 2021. The plan produced a PDF document, a Coastal Resilience Web Explorer, and two Open Data Portals. These products present information on anticipated exposure and impacts of coastal flooding (tidal flooding and coastal storm surge flooding) on community resources, critical sectors, and natural infrastructure now and into the future, when conditions are anticipated to change as a result of sea level rise.

6. Which of the Coastal Resilience Master Plan products have you used in your work? *

- [ ] PDF Plan Document: https://www.dcr.virginia.gov/crmp/document/VirginiaCoastalResilienceMasterPlan-Print.pdf
- [ ] Coastal Resilience Web Explorer: https://experience.arcgis.com/experience/9e32e928ed304fa98518b71905e43085
- [ ] Open Data Downloads: https://crmp-vdcr.hub.arcgis.com/ and https://registry.opendata.aws/vadcr-crmp-aws/
- [ ] None

7. Please rank the overall usefulness of the Coastal Resilience Master Plan products. *

	Extremely Useful	Somewhat useful	Neutral	Somewhat not useful	Not useful at all
PDF Plan Document	◯	◯	◯	◯	◯
Coastal Resilience Web Explorer	◯	◯	◯	◯	◯
Open Data Downloads	◯	◯	◯	◯	◯

8. Please provide any comments regarding the usefulness of the Coastal Resilience Master Plan products.

9. Consider the following potential use cases of the Coastal Resilience Master Plan products. Which of the following responses best reflect how you use the plan in your work? *

	Have used previously	Will use in the future	Could use, but do not intend to	Cannot use (product is insufficient)	Use case is not applicable
Advocacy Activities	◯	◯	◯	◯	◯
Capital investment decisions	◯	◯	◯	◯	◯
Grant making	◯	◯	◯	◯	◯
Grant seeking	◯	◯	◯	◯	◯
Plan development	◯	◯	◯	◯	◯
Policy making	◯	◯	◯	◯	◯
Program/ operational decisions	◯	◯	◯	◯	◯
Public education and awareness	◯	◯	◯	◯	◯
Research	◯	◯	◯	◯	◯

10. Have you used the Coastal Resilience Master Plan products in other ways? If so, please describe the product and its applications.

11. Have you encountered any limitations in the plan's products that have prevented you from using them how you would like? If so, please describe the product and its limitations.

12. What content would you most like to see included in future PDF plan documents?

13. Please rank the usefulness of the Coastal Resilience Web Explorer tools. https://experience.arcgis.com/experience/9e32e928ed304fa98518b71905e43085 *

	Extremely Useful	Somewhat Useful	Neutral	Somewhat not useful	Not Useful at All
Hazards	◯	◯	◯	◯	◯
Impacts	◯	◯	◯	◯	◯
Community Context	◯	◯	◯	◯	◯
Projects and Initiatives	◯	◯	◯	◯	◯
Funding Opportunities	◯	◯	◯	◯	◯

14. If you have downloaded open data, which of the two Coastal Resilience Open Data Portals have you used?

- ☐ Open data portal hub: https://crmp-vdcr.hub.arcgis.com/
- ☐ Open data hosted on AWS: https://registry.opendata.aws/vadcr-crmp-aws/
- ☐ Not sure

Funding Flood Resilience Activities

15. What types of financing have you *successfully used* to fund your flood resilience activities (projects, staffing, initiatives, planning, etc.)? *

- [ ] Traditional Bonds
- [ ] Green Bonds/Environmental Impact Bonds
- [ ] State Grant Funding
- [ ] Federal Grant Funding
- [ ] Federal Technical Assistance/Cost Share
- [ ] Special Tax
- [ ] Other

16. What types of financing have you *sought* to fund your flood resilience activities (projects, staffing, initiatives, planning, etc.)? *

- [ ] Traditional Bonds
- [ ] Green Bonds/Environmental Impact Bonds
- [ ] State Grant Funding
- [ ] Federal Grant Funding
- [ ] Federal Technical Assistance/Cost Share
- [ ] Special Tax
- [ ] Other

17. Are there any specific barriers that have prevented you from seeking or accessing funding for flood resilience activities? *

18. What could the Commonwealth do to help address barriers that prevent you from seeking or accessing funding for flood resilience activities? *

- [ ] Model ordinances where policy making is required
- [ ] Targeted education on flood resilience financial needs and options for elected officials or other leaders
- [ ] Best practices and case studies highlighting where flood resilience funding has been successful
- [ ] Training for local government staff or elected officials regarding establishing structures to support flood resilience financing
- [ ] Direct technical assistance for navigating applications and/or setting up structures to manage resilience
- [ ] Resources for evaluating grant funding opportunities (Making go/no go application decisions)
- [ ] Recommended metrics to support prioritization of flood resilience activities to fund
- [ ] Other

General

19. Are there any other ways in which the Commonwealth could support your organization's flood resilience needs?